

# **ATTACHMENT 8**

**SLIDES FROM JUNE 2, 1999  
PRESENTATION OF  
DR. ALAN WILLIAMS**

Estimates of US Blood Donors who Traveled/Lived  
in the United Kingdom or Republic of Ireland for  
Different Time Intervals During 1980-1996

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American Red Cross ARCNET Program  
National Heart, Lung, and Blood Institute (REDS)  
- in cooperation with the American Association of Blood Banks  
and America's Blood Centers

The 1999 Blood Donor Travel Survey

Participating Blood Centers:

- ◆ American Red Cross, Greater Chesapeake and Potomac Region
- ◆ American Red Cross, Southeastern Michigan Region
- ◆ American Red Cross, Southern California Region
- ◆ American Red Cross, New England Region
- ◆ American Red Cross, Connecticut Region
- ◆ American Red Cross, Southern Region
- ◆ Irwin Memorial Blood Centers/UCSF
- ◆ Oklahoma Blood Institute
- ◆ New York Blood Center
- ◆ Blood Bank of San Bernardino
- ◆ Lifeblood (Memphis)
- ◆ Community Blood Center of South Florida

## Travel Survey: Objectives

- ◆ Estimate US Donor travel/residence in United Kingdom for defined time periods relevant to BSE epidemic.
- ◆ Correlate travel/residence in United Kingdom with other donation variables to estimate impact of deferral on blood safety and availability

## Travel Survey: Methods

- ◆ Random sample - 12/98 or 1/99 donations
- ◆ Anonymous mail opscan surveys
- ◆ Single mailing of survey with cover letter
- ◆ Response (as of 6/1) = 9346/19,067 (49.0%)
- ◆ Presented data covers returns through 5/24/99 (n=8666/19,067)

Calculation of Theoretical vCJ-D Risk Associated with U.S. Blood Donor Travel to UK/Rep. of Ireland During 1989-1996 as Measured by ARCNET/REDS Donor Travel Survey

| Interval   | Midpoint (days) | # Persons | Person*days | % of Total Person*Days | Cumulative Person*Days |                    |
|------------|-----------------|-----------|-------------|------------------------|------------------------|--------------------|
|            |                 |           |             |                        | (Descending)           | (100 - descending) |
| 1-3 days   | 2               | 247       | 494         | 0.2%                   | 100                    | 0.0                |
| 4-10 days  | 7               | 668       | 4,676       | 1.9                    | 99.8                   | 0.2                |
| 11-30 days | 20              | 593       | 11,860      | 4.7                    | 98.0                   | 2.0                |
| 1-4 mos.   | 91              | 246       | 22,386      | 8.9                    | 93.3                   | 6.7                |
| 5-8 mos.   | 212             | 62        | 13,144      | 5.2                    | 84.4                   | 15.6               |
| 9-11 mos   | 319             | 11        | 3,509       | 1.4                    | 79.2                   | 20.8               |
| 1-2 years  | 730             | 37        | 27,010      | 10.7                   | 77.8                   | 22.2               |
| 3-5 years  | 1460            | 31        | 45,260      | 17.9                   | 67.1                   | 32.9               |
| 5-17 years | 4015            | 31        | 124,465     | 49.2                   | 49.2                   | 50.8               |
| Total      |                 | 1,926     | 252,804     | 100%                   |                        |                    |

Alan E. Williams, PhD.  
TSEAC 6/2/99

## Travel Survey: Question Categories

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- ◆ Demographics
- ◆ Donation History
- ◆ Travel/residence in United Kingdom/Rep. of Ireland (1980-89; 1990-96)
- ◆ Beef ingestion while in UK and past year
- ◆ Deferrable Risk estimates for UK travelers (DR93, DR98 from 1998 REDS survey)

## Determination of Travel or Residence in Great Britain

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- ◆ Did you travel to or live in the United Kingdom (England, Scotland, Wales, N. Ireland, Isle of Man, Channel Islands) or the Republic of Ireland .....
- ◆ .....between 1980 and 1989?
- ◆ .....between 1990 and 1996?

### Prevalence of Donor Travel/Residence in Great Britain 1980-96

|                               | <u>1980-89</u> | <u>1990-96</u> | <u>1980-96</u> |
|-------------------------------|----------------|----------------|----------------|
| UK travel                     | 15.5%          | 13.4%          | 22.6%*         |
| UK Travel/yr.<br>(unadjusted) | 1.6%           | 1.9%           | 1.3%**         |

\*Range by blood center - 11.2 - 30.5%

\*\* (Unadjusted UK travel/yr. 1984-90 from 1998 REDS survey = 1.7%)

### Correlates of Donor Travel/Residence in United Kingdom/Rep. of Ireland 1980-96

| <u>Variable</u> | <u>Adjusted Odds Ratios (95% CI)</u> |
|-----------------|--------------------------------------|
| Age             |                                      |
| 17-29           | 1.00                                 |
| 30-39           | 1.46 (1.21 - 1.77)                   |
| 40-55           | 1.20 (1.00 - 1.43)                   |
| 56-65           | 1.84 (1.49 - 2.27)                   |
| over 65         | 2.46 (1.94 - 3.13)                   |

Correlates of Donor Travel/Residence in  
United Kingdom/Rep. of Ireland 1980-96

| <u>Variable</u>  | <u>Adjusted Odds Ratios (95% CI)</u> |
|------------------|--------------------------------------|
| Gender           |                                      |
| Female           | 1.00                                 |
| Male             | 0.89 (0.80-0.99)                     |
| First Time Donor |                                      |
| No               | 1.00                                 |
| Yes              | 0.70 (0.52 - 0.94)                   |

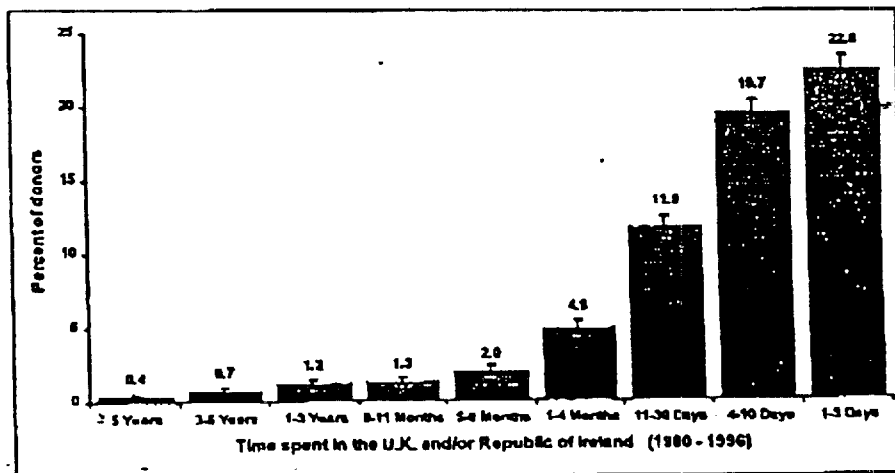
Correlates of Donor Travel/Residence in  
United Kingdom/Rep. of Ireland 1980-96

| <u>Variable</u>  | <u>Adjusted Odds Ratios (95% CI)</u> |
|------------------|--------------------------------------|
| Education        |                                      |
| 8th - 12th       | 1.00                                 |
| High school      | 0.98 (0.62 - 1.54)                   |
| Some College     | 1.51 (0.99 - 2.32)                   |
| College graduate | 4.73 (3.12 - 7.18)                   |

Cumulative Prevalence of Donor Travel to UK/Rep.  
Of Ireland for 1980-1996

| <u>Duration</u> | <u>Prevalence</u> | <u>95% CI</u> |
|-----------------|-------------------|---------------|
| ≥ 1 day         | 22.6%             | (21.7 - 23.5) |
| ≥ 4 days        | 19.7%             | (18.9 - 20.6) |
| ≥ 11 days       | 11.9%             | (11.2 - 12.6) |
| ≥ 1 month       | 4.9%              | (4.5 - 5.4)   |
| ≥ 5 months      | 2.0%              | (1.7 - 2.3)   |
| ≥ 9 months      | 1.3%              | (1.1 - 1.6)   |
| ≥ 1 year        | 1.2%              | (0.9 - 1.4)   |
| ≥ 3 years       | 0.7%              | (0.6 - 0.9)   |
| ≥ 5 years       | 0.4%              | (0.3 - 0.5)   |

Reported Cumulative Prevalence of Donor Travel to  
the U.K. and/or Republic of Ireland for 1980 to 1996

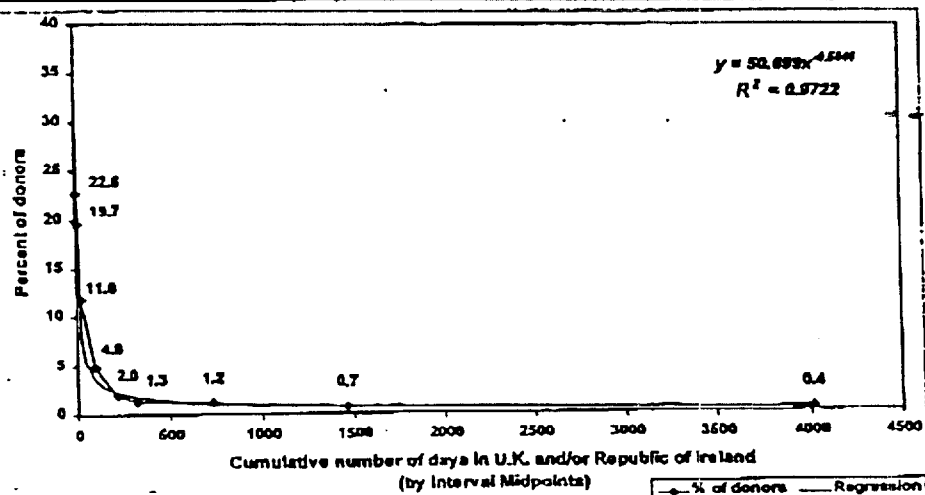




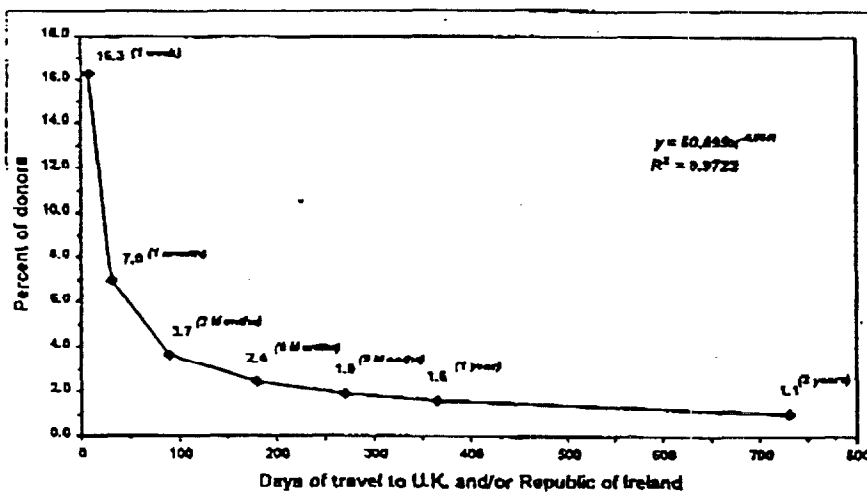
### Incremental Prevalence of Donor Travel to UK for 1980-89 and 1990-96 periods

|                   | <u>1980-89</u> | <u>1990-96</u> |
|-------------------|----------------|----------------|
| > 5 yrs           | 0.2%           | 0.1%           |
| 3 - 5 yrs         | 0.2%           | 0.2%           |
| 1 - 2 yrs         | 0.4%           | 0.2%           |
| 9 - 11 mos        | 0.1%           | 0.0%           |
| 5 - 8 mos         | 0.3%           | 0.2%           |
| 1 - 4 mos         | 1.4%           | 1.2%           |
| 11 - 30 days      | 4.5%           | 4.2%           |
| 4 - 10 days       | 6.2%           | 5.1%           |
| <u>1 - 3 days</u> | <u>2.2%</u>    | <u>2.2%</u>    |
| TOTAL             | 15.5%          | 13.4%          |

### Cumulative Time Spent in the U.K. and/or Republic of Ireland by Interval Midpoints



## Percent Loss of Donors for Various Cut-offs of Time Spent in the U.K. and/or Republic of Ireland



## Prevalence of Beef Ingestion by Donors During UK travel and Currently

### ◆ Beef eaten during UK travel

|                   | 1980-89 | 1990-96 |
|-------------------|---------|---------|
| <u>Yes</u>        | 74.2%   | 72.0%   |
| <u>No</u>         | 7.0%    | 15.0%   |
| <u>Don't Know</u> | 18.8%   | 13.0%   |

### ◆ Beef eaten in past year - 96.6%

## Impact of UK Travel Deferral on Apheresis Donors

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- ◆ Apheresis donors are significantly older and more educated than whole blood donors (data not shown). Higher travel deferral rates would be expected.
- ◆ Apheresis donors (n=200) surveyed at OBI had 20% higher 1980-96 UK travel rates (13.3%) than whole blood donors (11.1%)

## Impact of UK Travel Deferral on Military (Air Force) Donors

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- ◆ Military donors are more mobile than average donors, therefore UK travel would be expected to be higher.
- ◆ 8/25 (32%) of military respondents indicated travel to UK or Republic of Ireland during 1980-96. (NB: response rate was 12%)

## US Blood Resources

- ◆ US Blood Supply (AABB)
  - 13 million allogeneic units (22 million components)
  - 8 million donors
  - 4 million recipients
- ◆ US Donor Base
  - 2.6 million First Time\*
  - 5.4 million Repeat

\* 32% FT from 1997 ARCNET database

## Computation of Blood Resources Lost by Deferral of Donors Traveling to the United Kingdom

- ◆ Annual Loss of Units Donated by First Time Donors
  - = % FT donor travel loss x 1.3 units/yr x 2.6 million FT donors
- ◆ Annual Loss of Units Donated by Repeat Donors
  - = % Repeat donor travel loss x 1.8 units/yr. X 5.4 million repeat donors

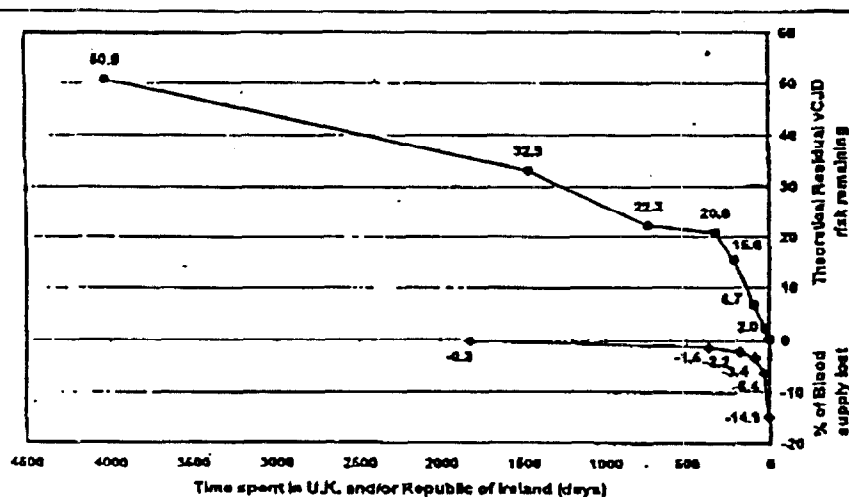
\*ARCNET-1997 database

## Blood Resources Lost by Deferral of Donors in Great Britain 1984-1990

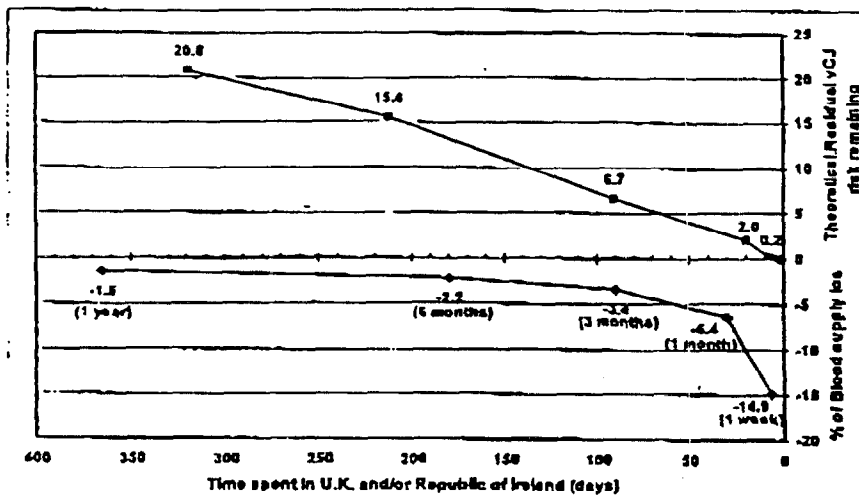
Deferral Prevalence X 11.9 million = estimated  
annual lost units

| <u>Deferral</u> | <u>Lost Units</u> | <u>% of US supply</u> |
|-----------------|-------------------|-----------------------|
| 5 year (.003)   | 35,700            | 0.3%                  |
| 1 year (.016)   | 190,400           | 1.5%                  |
| 6 mo. (.024)    | 285,600           | 2.2%                  |
| 3 mo. (.037)    | 440,300           | 3.4%                  |
| 1 mo. (.070)    | 833,000           | 6.4%                  |
| 1 week (.163)   | 1,939,700         | 14.9%                 |

## Residual vCJD Risk (Theoretical) vs. Percent of Blood Supply Lost



## Residual vCJD Risk (Theoretical) vs. Percent of Blood Supply Lost



## Estimates of "Deferrable Risk" (DR) from 1993 and 1998 donor surveys

- ◆ DR 93 - parenteral/sexual behavioral risk (1993 JAMA report)
- ◆ DR 98 - includes an additional ten questions used in 1998 (e.g. body piercing, tattoo, 72 hrs in jail, birth in HIV<sub>group O</sub> endemic country, etc)

### Estimates of "Deferrable Risk" (DR) from 1998 REDS donor survey

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| <u>UK travel 1984-90</u> | DR93      | DR98       |
|--------------------------|-----------|------------|
| Yes                      | 2.1%      | 7.2%       |
| No                       | 2.1%      | 7.7%       |
| <br>All FT Donors        | <br>4.3%† | <br>13.3%† |

† FT vs. UK travel donors Both OR= 0.5; p <.001

NB: FT/Rpt OR matches HIV incidence data

### Study Limitations

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- ◆ Survey risk estimates are reproducible, but are based upon self-report. Accuracy has not been validated by other independent measures.

## Acknowledgements:

- ♦ Blood Centers - PIs and staff; Ron Gilcher, Jim Smith
- ♦ ARC Holland Laboratory - Melinda Tibbals, Edward Notari IV, Roger Dodd
- ♦ Westat, Inc. - Dannië Ameti, Kevin Watanabe
- ♦ TSEAC/FDA - Paul Brown, Peter Lurie, Larry Schonberger, Jay Epstein, Mary Beth Jacobs
- ♦ Planning Committee - Celso Bianco, Richard Davey, Kay Gregory, Steve Kleinman, Alan Williams

## Blood Donor Exposure to Deer and Elk

- ♦ Hunted deer or elk      1145/8610 (13.3%)
  - field dressed      583/8610 (6.8%)
- ♦ Ate deer or elk      5380/8598 (62.6%)
  - killed in the wild
    - Yes 3437/8598 (40.0%)
    - Don't know 476/8598 (5.5%)
  - ate brain or spinal cord
    - Yes - 15/8598 (0.2%)
    - Don't know 226/8598 (2.6%)